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Maine Behavioral Risk Factor Survey

1987 – 1988

MAINE DEPARTMENT OF HUMAN SERVICES
Bureau of Health
Division of Health Promotion & Education

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OFFICE OF DATA, RESEARCH AND VITAL STATISTICS

IN COOPERATION WITH THE CENTERS FOR DISEASE CONTROL
OFFICE OF SURVEILLANCE AND ANALYSIS
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EXECUTIVE SUMMARY

Maine is one of 46 participating states in a nationwide survey of behavioral risk factors, sponsored by the Centers for Disease Control. The Behavioral Risk Factor Surveillance System (BRFSS) gathers data from Maine residents on their awareness and utilization of preventive measures such as mammography and cholesterol screening and on the key lifestyle behaviors which contribute to morbidity, disability, and early mortality from chronic diseases such as cancer and coronary heart disease. The greatest risks to public health arise from the following behavioral risk factors:

- Tobacco Use
- Uncontrolled Hypertension
- Abuse of Alcohol
- Obesity
- Physical Inactivity

Maine's BRFSS is a monthly telephone survey of Maine adults aged 18 and over who are selected by random methods to answer a questionnaire on health habits. Over 3,000 Maine people have consented to participate in the survey since its inception in 1986. The first report from the BRFS system was published in 1987 and provided baseline data from Maine's first survey in 1986. This report summarizes the two years of data collection since the first report, 1987 and 1988.

Highlights of results for the two years of data collection follow:

- The overall rate of current smoking among the 2,509 people surveyed was 27 percent.
- The overall prevalence of uncontrolled hypertension was 17 percent.
- More than half of survey respondents reported that they did not wear seatbelts regularly.
- Twenty-six percent of Maine adults were classified as being overweight.
- The overall prevalence of sedentary lifestyle was 59 percent of Maine adults.
- Two percent of the respondents surveyed reported driving after drinking.
- Fifty-eight percent of Maine adults had had their blood cholesterol checked.

- Although knowledge of mammography was high at about 90 percent among Maine adult women, utilization of screening mammography for early detection of breast cancer was fairly low at approximately 40 percent.

- Knowledge and utilization of pap smear to detect early cervical cancer was high among Maine's women at 99 percent and 95 percent, respectively.

- Over two-thirds of respondents in 1988 stated that their chance of getting AIDS was "none."

Although BRFSS data are shared with and used by health professionals in Maine and at the national level, the data are limited by the fact that they are based on self-reported information. Survey research has shown that individuals tend to report a more favorable lifestyle to strangers than they actually practice.

The Behavioral Risk Factor Surveillance System will continue to monitor Maine's progress in improving the health of its citizens through reduction or elimination of those behaviors which impair health. Data collected in future years will be shared with the Centers for Disease Control for national estimates of unhealthy behaviors, and used by health professionals in Maine for continued efforts in risk reduction programs.

I. INTRODUCTION

INTRODUCTION

Of the ten leading causes of death in Maine in 1988, 58 percent were due to heart disease and cancer (1). Environmental, genetic, and behavioral factors each play a role in the causation of death and disability from heart disease and cancer as well as other chronic diseases such as diabetes. A behavioral risk factor is defined as a lifestyle choice, whether personal or the result of social, cultural, or economic conditions, which contributes to early mortality, morbidity, or disability from chronic disease and injury. Smoking, alcohol abuse, uncontrolled hypertension, sedentary lifestyle, obesity, and poor nutrition comprise the major risk factors. Each of them is amenable to modification and reduction. Risk factor definitions for the survey are contained in Appendix A.

A major goal of the Division of Health Promotion and Education, Bureau of Health is to monitor and reduce the key lifestyle practices which contribute to death and disability from chronic disease in Maine. Maine's Behavioral Risk Factor Surveillance System (BRFSS) is an important tool in the management of risk reduction programs carried out by the Division and the Bureau. BRFSS provides monthly surveillance of behavioral risk factors in Maine's adult population aged 18 and over. Each month, 105 randomly selected Maine residents are contacted by telephone and asked a series of questions about lifestyle behaviors and preventive health measures. Data are utilized by health professionals for program planning and for identifying and evaluating control measures. The Centers for Disease Control (CDC) use Maine's data and those from 45 other states to monitor behavioral risk factors nationally. The Maine BRFSS is a collaborative effort of the Division of Health Promotion and Education, the Office of Data, Research and Vital Statistics, and the CDC.

Over 3,000 Maine residents have been interviewed since the BRFSS was begun in 1986. Results from the 1986 survey have previously been reported (2). Data from 1987 and 1988 comprise this report. These data represent interviews with 2,509 adult Maine residents.

HEALTH OVERVIEW

Nine major chronic diseases caused 52 percent of all U.S. deaths in 1986 (3). They are:

- Coronary heart disease
- Stroke
- Diabetes
- Chronic obstructive pulmonary disease
- Lung cancer
- Female breast cancer
- Cervical cancer
- Colorectal cancer
- Cirrhosis

Nationally, over one million succumbed to these diseases in 1986.

Maine's mortality from chronic disease mirrors the national experience. However, for certain diseases Maine's age adjusted mortality rates are higher than the national average. Table I-1 presents mortality rates for selected chronic diseases by number of deaths, rate per 100,000, and Maine's rank in comparison with other states; data are from 1986, the most recent CDC compilation available.

Table I-1
Mortality Rates for Selected Chronic Disease Maine, 1986

Condition	Number of deaths	Rate per 100,000	Maine's rank by state
Coronary heart disease	3435	257.4	11
Stroke	765	55.9	38
Lung cancer	704	56.1	18
Smoking-related COPD	480	36.6	11
Colorectal cancer	334	25.8	11
Female breast cancer	209	32.5	22
Diabetes	182	13.9	36
Cirrhosis	117	9.5	29
Cervical cancer	29	4.6	13

Source: (3)

As noted in Table I-1, Maine's age-adjusted coronary heart disease mortality rate of 257.4/100,000 was among the highest in the country; just ten other states had higher rates than Maine. Deaths from lung cancer, cervical cancer, colorectal cancer and smoking-related chronic obstructive pulmonary disease were also relatively high in comparison with rates from other BRFSS participant states (3).

A cluster of behavioral risk factors has been identified by epidemiologic studies to be important predictors of mortality, morbidity, and disability from the major chronic diseases. They are:

- Smoking
- Uncontrolled hypertension
- Alcohol abuse
- Obesity
- Sedentary lifestyle
- Excess dietary fat

Each of the major behavioral risk factors is amenable to modification through changes in lifestyle supported by organizational change and policy changes.

GOALS OF THE BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

Maine's BRFSS is designed to:

- Monitor prevalence of risk factors
- Aid in formulating health promotion objectives
- Aid in implementing community and statewide interventions in such areas as smoking cessation
- Assist in determinimg success or failure of longterm risk reduction programs

METHODOLOGY

BRFSS Questionnaire

The BRFSS questionnaire was developed by the CDC and is used in every participating state. It contains a section of core questions agreed upon by every state. Core questions do not change from year to year; this provides continuity in determining long-term trends. In addition, other CDC-designed modules are used by states according to their needs on an intermittent basis. For example, in Maine questions on the use of smokeless tobacco are asked every other year. States also add questions of local interest.

The questionnaire used in Maine since inception of the survey has contained questions on the following subjects:

- Seatbelt usage
- Hypertension
- Exercise
- Diet
- Tobacco use
- Alcohol consumption
- Preventive health practices including cholesterol screening, mammography, breast self-examination, pap smear, and colorectal cancer screening
- Diabetes
- Injury control and child safety
- Demographics including age, sex, education, income, employment status, race, and marital status

An important advantage of the BRFSS is the flexibility it provides in responding to emerging health problems such as AIDS. In its second year of operation Maine's BRFSS added a module on AIDS-related knowledge. As health problems are identified in the future, Maine will be favorably positioned to gather data and communicate the information to health professionals quickly.

Telephone vs. Household Interview

Telephone interview by random digit dialing was selected by the CDC as the most efficient and cost effective way to conduct the BRFSS. The method does have limitations, however, the most notable being that only those households with telephones are eligible for selection. The proportion of occupied housing units with telephones is variable in Maine; just over 94 percent of households in Cumberland County have telephones compared to approximately 88 percent in Somerset County, according to the 1980 Census of Housing, the latest information available. Assuming that the lack of telephone service is related to low income, Maine residents of low income may be systematically excluded from behavioral risk factor surveillance.

Sampling Design and Respondent Selection

The BRFSS utilizes a sampling frame of all Maine telephone numbers, published and unpublished. Selection of any given telephone number to call is purely random and is based on the Waksberg three-stage cluster design. (For a detailed description of this methodology, please see Waksberg, J. Sampling Methods for Random Digit Dialing. Journal of the American Statistical Association, 73: 40-46, March 1978.)

Accuracy of Estimates

Maine BRFSS completes 105 interviews a month for a yearly total of 1,260 questionnaires. The estimated prevalences reported in this study for the major behavioral risk factors among the total adult Maine population are accurate to within 1 to 2 percent at the 95 percent confidence level. Estimates of prevalence by gender or other demographic variables are less accurate because of smaller sample size. These estimates should be interpreted conservatively. Each section in this report contains a summary of confidence intervals for each demographic variable. There may be a higher or lower prevalence of certain behaviors in the BRFSS survey because individuals responding to the questionnaire may report a more favorable lifestyle than actually practiced. This limitation does not, however, affect the survey`s ability to identify high-risk groups and monitor long-term trends.

Data Collection, Processing, and Analysis

Telephone interviews are conducted one week per month, usually during the evening hours and on weekends by part-time interviewers trained in the use of the BRFSS questionnaire. Data are edited at the end of each calling period and submitted to the Division of Data Processing, Department of Human Services for keypunching. Data analysis is carried out both by CDC and by the Division of Health Promotion and Education in collaboration with the Office of Data, Research and Vital Statistics. The chi-square test of significance was used for certain cross comparisons.

Weighting

Even though the BRFSS sample is selected by random procedures, results may show disproportionate numbers in certain demographic categories. For example, the age distribution in the BRFSS sample may not match the distribution for the Maine population 18 years of age and older. The CDC applies a weighting procedure, based on estimated populations for census and intercensus years, to correct this imbalance. Data are routinely weighted for age and sex and occasionally weighted for racial composition, survey nonresponse, and households that can be reached by more than one telephone number.

All of the prevalence estimates in this report are presented as weighted percents.

1990 Health Objectives for the Nation

With the publication of Healthy People in 1979,(4) the United States Public Health Service initiated a decade-long, national strategy to enhance the health of the United States population.

National goals for enhancement of the public's health were set by working committees which targeted 15 areas as priorities. These areas include some which are covered in this report such as high blood pressure control, smoking and health, misuse of alcohol and drugs, and physical fitness and exercise.

For each major behavioral risk factor in this report, reference to the 1990 objectives is made whenever relevant.

Combined Data

Data for 1987 and 1988 have been combined for this report for the major risk factors. For other data items, only 1988 data are used.

II. DEMOGRAPHIC RESULTS

DEMOGRAPHIC RESULTS

Demographic information from the BRFSS sample for each year is presented in Table II-1 and includes the following variables:

- Sex
- Age
- Marital status
- Income
- Education
- Employment status

Unweighted data have shown marked differences by gender for each of the three years the survey has been carried out. Male respondents have been underrepresented in this survey, which has constituted a problem in validating results. Male respondents were not at home or refused to participate in BRFSS more often than female respondents. The weighting procedure employed by the CDC corrects this problem in part.

Table II-1:
BRFSS Maine, 1987-1988 Demographic Variables

Demographic Variable	1987		1988	
	Number	Weighted Percent	Number	Weighted Percent
Sex				
Female	760	52.6	776	52.6
Male	466	47.4	507	47.4
Age				
18-24	116	13.3	104	13.3
25-34	288	22.4	326	22.4
35-44	262	20.3	278	20.3
45-54	154	12.9	157	12.9
55-64	144	12.6	168	12.6
65+	262	18.5	250	18.5
Marital status				
Married	742	68.3	791	68.3
Divorced	148	8.4	128	6.6
Widowed	152	7.9	152	7.6
Separated	24	1.3	18	0.9
Never married	151	11.4	165	14.0
Unmarried couple	28	2.7	27	2.6
Household income level (per year)				
$10,000	231	15.5	150	15.0
$10,000-$15,000	184	14.6	150	11.8
$15,000-$20,000	140	11.2	139	10.4
$20,000-$25,000	141	12.2	160	12.8
$25,000-$35,000	198	16.9	225	17.5
$35,000-$50,000	129	11.1	144	12.6
$50,000 or more	83	8.0	106	8.8
(Unknown/refused)	120	10.5	131	11.2
Education level				
9th grade	85	6.7	97	7.4
Some high school	133	11.5	149	11.8
High school graduate	492	40.4	477	37.6
Some technical school	22	1.8	19	1.4
Technical school grad	25	2.0	31	2.5
Some college	204	16.5	199	16.2
College graduate	198	15.8	241	17.9
Postgraduate	66	5.3	69	5.1
Employment status				
Employed	606	51.5	639	51.1
Self-employed	115	9.8	135	10.6
Out of work < 1 year	19	1.5	12	0.8
Out of work > 1 year	38	3.3	15	1.2
Homemaker	161	12.2	152	10.7
Student	21	2.5	19	2.5
Retired	266	19.2	285	20.9

Note: Percentages are expressed as weighted percents

III. SMOKING

SMOKING

Cigarette smoking is a major cause of lung cancer and an important risk factor in coronary heart disease. Fortunately, the use of cigarettes has declined considerably in the United States since the first Surgeon General's report on the hazards of smoking in 1964 (5), particularly among middle-aged men. Peak per capita consumption of cigarettes in the United States was 4,345 in 1963 among those 18 years of age and older; in 1985 per capita consumption of cigarettes was 3,384 (6). However, smoking continues to be **the most preventable cause of death and disability in the United States.**

For purposes of the BRFSS survey, current smoking is defined by "yes" answers to the following questions:

1. Have you ever smoked 100 cigarettes in your entire life?

2. Do you smoke now?

Classification of Maine adults by smoking status is given in Figure III-1. Prevalence of current smoking was higher among younger age groups in Maine (Figure III-2). In fact, recent evaluation of smoking trends by the CDC, using 1988 BRFSS data from 37 states, showed that the proportion of those aged 18-34 who ever smoked was highest in Maine (53.1 percent) and New Hampshire (49.4 percent), as was the proportion of persons who had quit smoking (7).

Figure III-1:
Classification by Smoking Status, 1987-1988

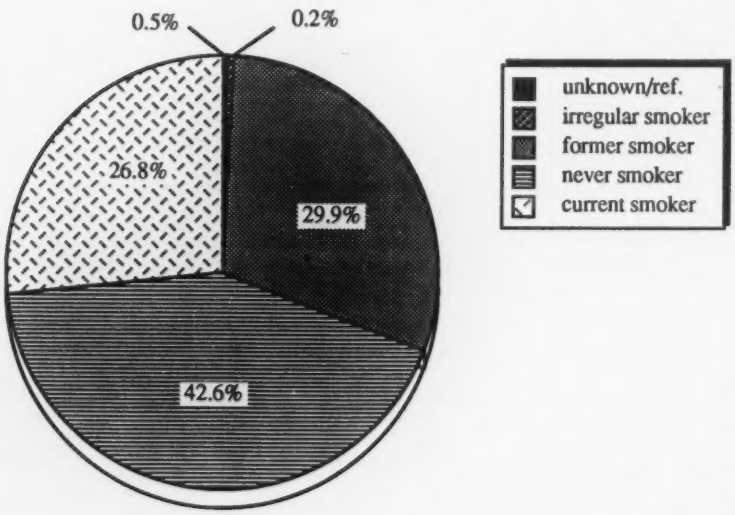


Figure III-2:
Smoking Prevalence by Age Groups, 1987-1988

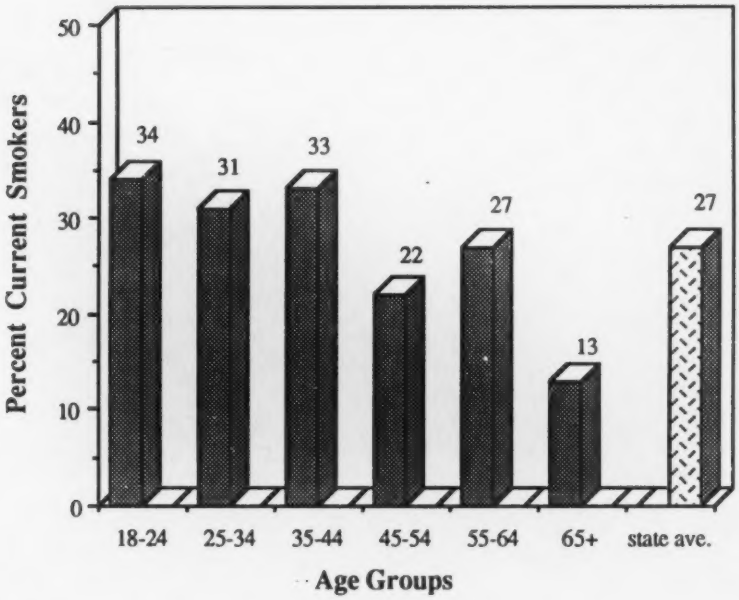
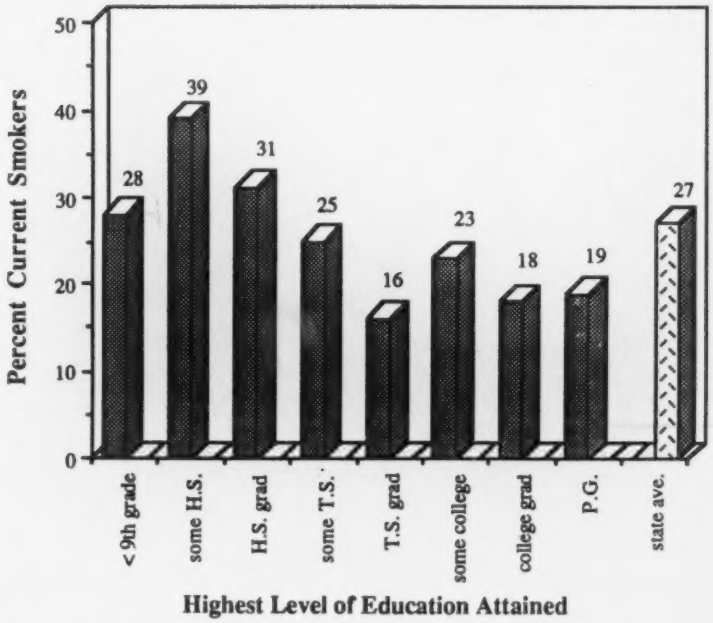


Figure III-3:
Smoking Prevalence by Level of Education, 1987-1988



The national BRFSS data showed that the likelihood of being a current smoker increased substantially with each decrease in level of education. The national data were confirmed at least in part by the data in Maine. Figure III-3 (Highest Level of Education Attained: H.S.= highschool, T.S. = technical school, P.G. = postgraduate) shows prevalence of smoking by highest year of education attained and suggests a trend toward higher smoking rates in those with less education.

Current smokers were asked if they had attempted to quit smoking for a week or more. Approximately 40 percent of Maine people surveyed stated that they had stopped smoking for a week or more in the last year.

As smoking is such an important risk factor for chronic diseases and can increase risk of morbidity and mortality appreciably when present in combination with other risk factors, cross tabulations were performed for smoking and other selected variables for the 1988 BRFSS data. The data are displayed in Table III-1.

Table III-1
Behavioral Risk Factor Survey
Maine, 1987-1988

Smoking by Selected Variables
1988 Data

Variables	Smokers %	Nonsmokers %
Obesity (by Body Mass Index)	30	53*
High fat diet	18	6
Exercise	59	67
Alcohol use in past month	63	56
Add salt to food most or some of the time	52	38
Been told has diabetes	3	6**
Use of oral contraceptive	19	30
Use of seatbelts (always or sometimes)	51	66

* $p < 0.001$
** $p < 0.01$
(chi-square test)

The most significant association existed between smoking and body weight and confirmed observations that smokers may use cigarettes to control their weight. These data suggest that smoking cessation programs must more aggressively address the fear of weight gain when smokers attempt to quit.

The smoking cross tabulations also demonstrated that smoking tends to be associated with other high-risk behaviors, such as a high-fat diet, use of salt on food, and lack of seatbelts. None of these associations was statistically significant, however.

1990 Health Objectives for the Nation

The 1990 objective for smoking was to reduce smoking by adults 18 years of age or over to below 25 percent. This goal may be achieved in Maine. Smoking prevalence rates

in the United States are the lowest since the mid fifties. Unfortunately, within certain groups-- young adults--the prevalence is unacceptably high. As a recent assessment on the progress of the 1990 objectives stated:

> "A continued and lasting decline in the proportion of the population that smokes will depend on the success of public and private sector efforts to persuade individuals, especially teenagers and young adults, not to take up smoking." (8)

Smokeless Tobacco

Nationally, there was a sharp increase in the use of smokeless tobacco products between 1970 and 1985, particularly among children and teenagers (9). Use of smokeless tobacco is generally highest in the southern portions of the United States and lowest in the northeast.

Smokeless tobacco can cause oral cancer and peridontal disease, and can lead to the possible use of cigarettes by young users, since smokeless tobacco contains nicotine (10).

Federal law requires that smokeless tobacco products and advertisements carry warning labels about the health hazards of their use. Smokeless tobacco advertising is banned from television and radio.

The reported use of smokeless tobacco in Maine was 2.7 percent in the 1987 survey and 1.6 percent in the 1988 survey. No women reported using smokeless tobacco in either year.

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Smoking

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		27% ± 2%	25% to 29%
by Sex:	Male	26% ± 3%	24% to 29%
	Female	27% ± 2%	25% to 30%
by Age Group:	Age 18-24	34% ± 6%	28% to 41%
	Age 25-34	31% ± 4%	28% to 35%
	Age 35-44	33% ± 4%	29% to 37%
	Age 45-54	22% ± 5%	17% to 26%
	Age 55-64	27% ± 5%	22% to 32%
	Age 65+	13% ± 3%	10% to 16%
by Marital Status:	Married	25% ± 2%	23% to 27%
	Divorced	46% ± 6%	40% to 52%
	Widowed	22% ± 5%	17% to 26%
	Separated	27% ±13%	14% to 40%
	Never Married	28% ± 5%	23% to 33%
	Unmarried Couple	40% ±13%	27% to 53%
by Income Level:	<$10,000	29% ± 4%	25% to 33%
	$10-15,000	31% ± 5%	26% to 36%
	$15-20,000	30% ± 5%	24% to 35%
	$20-25,000	27% ± 5%	22% to 32%
	$25-35,000	26% ± 4%	22% to 30%
	$35-50,000	22% ± 5%	17% to 26%
	$50,000+	23% ± 6%	17% to 29%
by Employment Status:	Employed	30% ± 3%	27% to 32%
	Self Employed	28% ± 6%	22% to 33%
	Unemp >1 Yr	33% ±17%	17% to 50%
	Unemp <1 Yr	42% ±13%	28% to 55%
	Homemaker	33% ± 5%	28% to 39%
	Student	20% ±12%	8% to 33%
	Retired	15% ± 3%	12% to 18%
by Education Level:	<9th Grade	28% ± 6%	21% to 34%
	Some HS	39% ± 6%	33% to 44%
	HS Grad	31% ± 3%	28% to 33%
	Some Tech School	25% ±13%	12% to 38%
	Tech School Grad	16% ±10%	6% to 26%
	Some College	23% ± 4%	19% to 27%
	College Grad	18% ± 4%	14% to 22%
	Post Grad	19% ± 7%	12% to 26%

NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health.
Table prepared by the Office of Data, Research, and Vital Statistics.

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Smokless Tobacco Use

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		2% ± 1%	2% to 3%
by Sex:	Male	5% ± 1%	3% to 6%
	Female	0% ± 0%	0% to 0%
by Age Group:	Age 18-24	6% ± 3%	3% to 9%
	Age 25-34	2% ± 1%	1% to 2%
	Age 35-44	1% ± 1%	0% to 1%
	Age 45-54	3% ± 2%	1% to 5%
	Age 55-64	2% ± 2%	1% to 4%
	Age 65+	2% ± 1%	1% to 3%
by Marital Status:	Married	2% ± 1%	1% to 3%
	Divorced	1% ± 1%	0% to 3%
	Widowed	2% ± 1%	0% to 3%
	Separated	2% ± 5%	0% to 7%
	Never Married	4% ± 2%	2% to 6%
	Unmarried Couple	4% ± 5%	0% to 10%
by Income Level:	<$10,000	3% ± 2%	2% to 5%
	$10-15,000	3% ± 2%	1% to 5%
	$15-20,000	2% ± 1%	0% to 3%
	$20-25,000	2% ± 1%	0% to 3%
	$25-35,000	2% ± 1%	1% to 3%
	$35-50,000	1% ± 1%	0% to 2%
	$50,000+	2% ± 2%	0% to 3%
by Employment Status:	Employed	2% ± 1%	1% to 3%
	Self Employed	5% ± 3%	2% to 8%
	Unemp >1 Yr	0% ± 0%	0% to 0%
	Unemp <1 Yr	2% ± 4%	0% to 6%
	Homemaker	0% ± 0%	0% to 0%
	Student	5% ± 7%	0% to 12%
	Retired	2% ± 1%	1% to 3%
by Education Level:	<9th Grade	5% ± 3%	2% to 9%
	Some HS	3% ± 2%	1% to 5%
	HS Grad	2% ± 1%	1% to 3%
	Some Tech School	6% ± 7%	0% to 14%
	Tech School Grad	0% ± 0%	0% to 0%
	Some College	2% ± 1%	1% to 3%
	College Grad	0% ± 0%	0% to 1%
	Post Grad	3% ± 3%	0% to 6%

NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health. Table prepared by the Office of Data, Research, and Vital Statistics.

IV. HYPERTENSION

HYPERTENSION

More than 50 million people in the United States have elevated blood pressure or are taking antihypertensive medication. Table IV-1 gives the classification of normal and abnormal blood pressure in adults aged 18 or over.

Table IV-1

Classification of Blood Pressure in Adults Age 18 Years of Older

Range, mmHg	Category
Diastolic	
85	Normal blood pressure
85 - 90	High normal blood pressure
90 - 104	Mild hypertension
105 - 114	Moderate hypertension
115	Severe hypertension
Systolic, when diastolic blood pressure is 90	
140	Normal blood pressure
140 - 159	Borderline isolated systolic hypertension
160	Isolated systolic hypertension

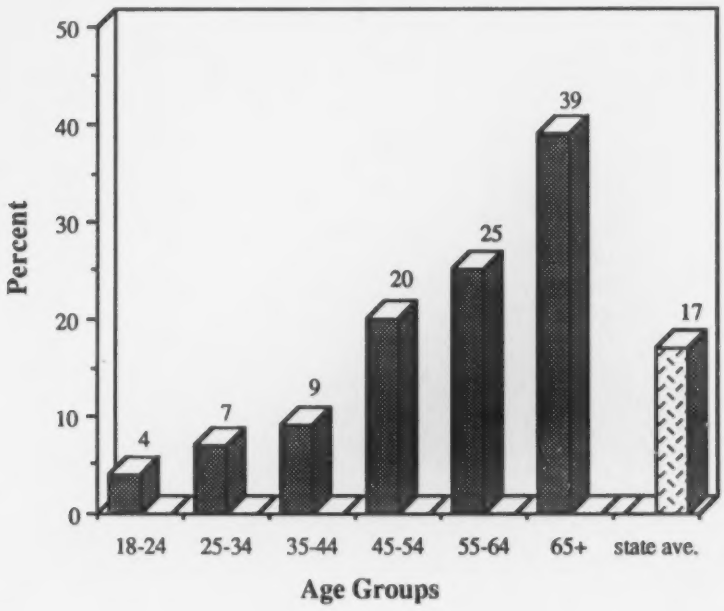
Source: The 1988 Report of the Joint Committee on Detection, Evaluation, and Treatment of High Blood Pressure, U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, NIH Publication No. 88-1088 May 1988

Nationally, excellent improvement in awareness, treatment, and control of hypertension has occurred since 1974. Then, only about 50 percent of people with hypertension were aware that their blood pressure was high. Only 36 percent of them were under treatment and 16 percent of them had their high blood pressure under control. By 1984, 85 percent of individuals with hypertension were aware of their condition and 74 percent were under treatment (11, 12).

Hypertension is a major risk factor for both thrombotic and hemorrhagic stroke, cardiovascular disease, and peripheral vascular disease. Individuals who have both diabetes and hypertension are especially vulnerable to the complications of cardiovascular disease.

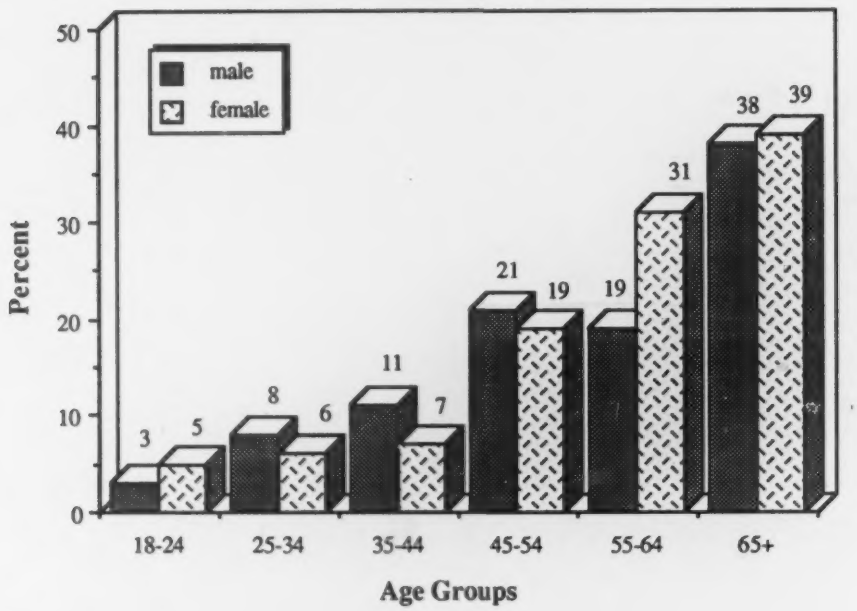
The National Heart, Lung and Blood Institute has defined "current hypertensive" as those respondents who reported that they have been told they have hypertension more than once, or are on medication, or report that their blood pressure is still high.

Figure IV-1:
Prevalence of Uncontrolled Hypertension by Age 1987-1988



Combined data for 1987 and 1988 showed that 17 percent of Maine adults were classified as "currently hypertensive." Those in the 55-64 and 65+ age groups were significantly above the state average of 17%. Figure IV-1 shows respondents who were classified as "hypertensive" by age group. To illustrate the frequency of hypertension by age and gender in Maine, 1988's results are shown in Figure IV-2.

Figure IV-2:
Prevalence of Uncontrolled Hypertension by Age and Gender
1987-1988



Death and disability from stroke and cardiovascular disease have shown a decline over the last decade. This situation has developed, in part, because of the adoption of more healthy lifestyles by individuals and the strides made in the diagnosis and treatment of hypertension (13).

1990 Health Objectives for the Nation

The goal for risk reduction in hypertension states that:

> "By 1990, at least 60 percent of the estimated population having high blood pressure (defined as 140/90 mm Hg or above, or taking antihypertensive medication) should have obtained successful blood pressure control, i.e., blood pressure below 140/90 mmHg." (8)

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Hypertension

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		17% ± 1%	15% to 18%
by Sex:	Male	16% ± 2%	13% to 18%
	Female	18% ± 2%	16% to 20%
by Age Group:	Age 18-24	4% ± 3%	1% to 6%
	Age 25-34	7% ± 2%	5% to 9%
	Age 35-44	9% ± 2%	6% to 11%
	Age 45-54	20% ± 4%	16% to 25%
	Age 55-64	25% ± 5%	20% to 30%
	Age 65+	39% ± 4%	34% to 43%
by Marital Status:	Married	17% ± 2%	15% to 19%
	Divorced	14% ± 4%	10% to 18%
	Widowed	36% ± 5%	30% to 41%
	Separated	22% ±12%	9% to 34%
	Never Married	8% ± 3%	5% to 11%
	Unmarried Couple	8% ± 7%	1% to 15%
by Income Level:	<$10,000	25% ± 4%	21% to 29%
	$10-15,000	23% ± 5%	19% to 28%
	$15-20,000	18% ± 4%	13% to 22%
	$20-25,000	13% ± 4%	10% to 17%
	$25-35,000	11% ± 3%	8% to 13%
	$35-50,000	14% ± 4%	10% to 18%
	$50,000+	9% ± 4%	5% to 14%
by Employment Status:	Employed	12% ± 2%	10% to 13%
	Self Employed	11% ± 4%	7% to 15%
	Unemp >1 Yr	8% ±10%	0% to 18%
	Unemp <1 Yr	17% ±10%	7% to 28%
	Homemaker	17% ± 4%	13% to 21%
	Student	5% ± 6%	0% to 11%
	Retired	35% ± 4%	31% to 39%
by Education Level:	<9th Grade	30% ± 7%	23% to 36%
	Some HS	16% ± 4%	12% to 20%
	HS Grad	18% ± 2%	16% to 21%
	Some Tech School	10% ± 9%	1% to 20%
	Tech School Grad	10% ± 8%	2% to 18%
	Some College	12% ± 3%	9% to 16%
	College Grad	14% ± 3%	10% to 17%
	Post Grad	19% ± 7%	12% to 25%

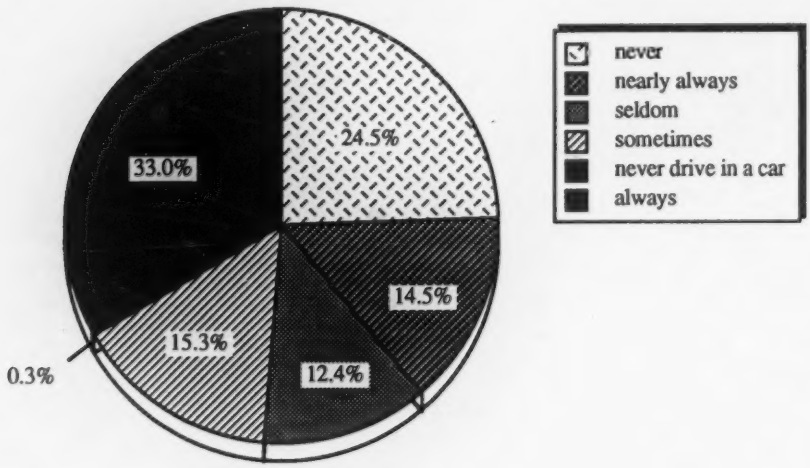
NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health.
Table prepared by the Office of Data, Research, and Vital Statistics.

V. SEATBELT USE

SEATBELT USE

In Maine 239 people died in motor vehicle accidents in 1988 (1). Of those who could have been buckled up, the majority were not wearing a seatbelt at the time (14). Of the ten leading causes of death, motor vehicle accidents ranked seventh in that year (1).

Figure V-l:
CLASSIFICATION BY FREQUENCY OF SEATBELT USE
1987-1988



Seatbelt use or nonuse is determined by answers to the question, "How often do you use seatbelts when you drive or ride in a car?" Those who answer "always" or "almost always" are classified as seatbelt users. Respondents who answer "seldom", "sometimes", or "never", are judged to be seatbelt nonusers. The proportions of Maine residents who fell into these categories are shown in Figure V-1. The prevalence of lack of seatbelt use by age and gender is shown in Figure V-2.

Education was a key demographic variable in the use of seatbelts; those with less than a ninth grade education, some high school or high school degrees were higher than the state total in seatbelts nonuse. Those with some college, college graduates and those with postgraduate education were significantly below the state average (Figure V-3).

Figure V-2:
Prevalence of Seatbelt Nonuse by Age and Gender
1987-1988

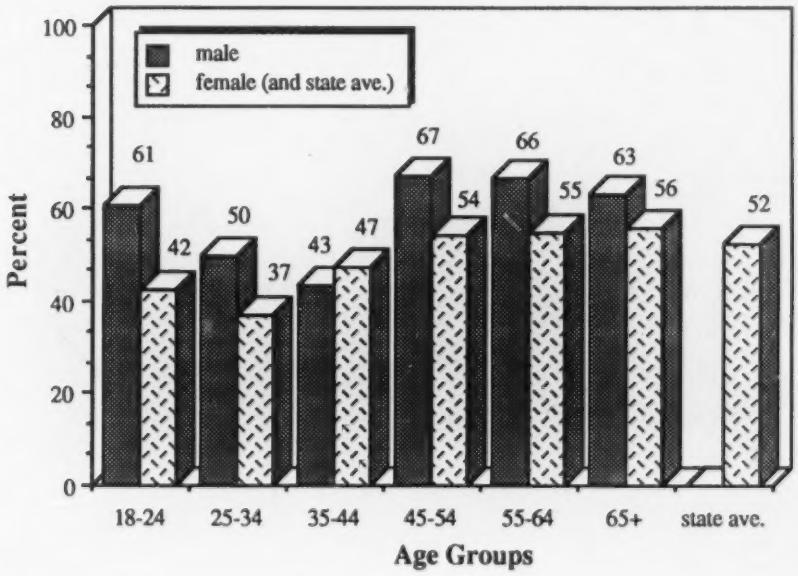
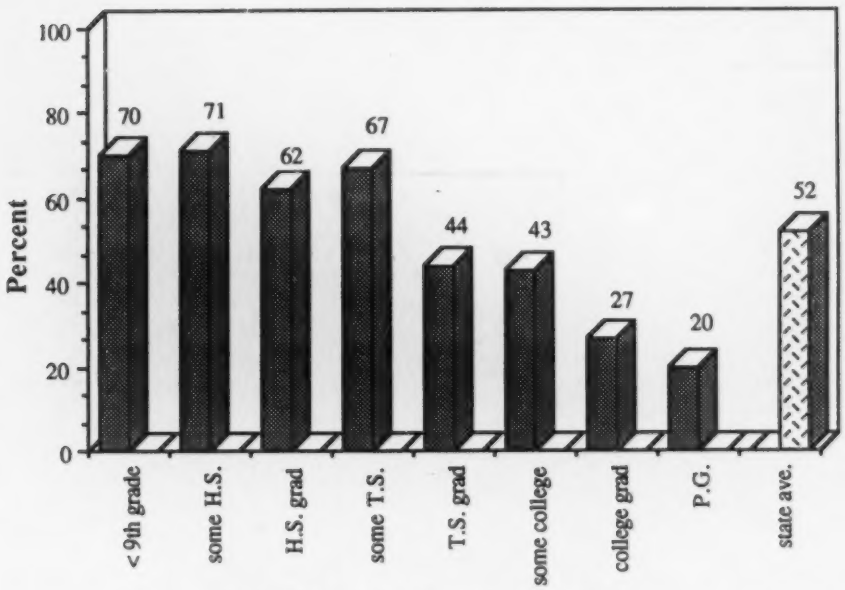


Figure V-3:
Prevalence of Seatbelt Nonuse by Education
1987-1988



H.S. = high school T.S. = technical school P.G. = post graduate

Observational studies have found that usage of seatbelts increases dramatically after enactment of mandatory use seatbelt laws, at least initially. In New York, seatbelt use increased from 16 percent to 57 percent after a mandatory use law was implemented (15). Prevalence of seatbelt use leveled off to 46 percent after nine months. Automobile fatalities decreased 17 percent for the first nine months of New York's seatbelt law.

Every state and the District of Columbia require child safety seatbelt use, while only sixteen states have passed mandatory seatbelt laws for adults as of this writing.

1990 Health Objectives for the Nation

The objectives call for a reduction in the motor vehicle fatality rate to no greater than 18 per 100,000 population (8).

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Lack of Seatbelt Usage

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		52% ± 2%	50% to 54%
by Sex:	Male	57% ± 3%	53% to 60%
	Female	48% ± 2%	46% to 50%
by Age Group:	Age 18-24	52% ± 7%	45% to 58%
	Age 25-34	43% ± 4%	39% to 47%
	Age 35-44	45% ± 4%	41% to 49%
	Age 45-54	60% ± 5%	55% to 66%
	Age 55-64	60% ± 5%	55% to 66%
	Age 65+	59% ± 4%	54% to 63%
by Marital Status:	Married	52% ± 3%	49% to 54%
	Divorced	54% ± 6%	48% to 60%
	Widowed	58% ± 6%	52% to 63%
	Separated	57% ±15%	42% to 72%
	Never Married	49% ± 6%	43% to 54%
	Unmarried Couple	59% ±13%	46% to 72%
by Income Level:	<$10,000	65% ± 4%	60% to 69%
	$10-15,000	60% ± 5%	54% to 65%
	$15-20,000	49% ± 6%	44% to 55%
	$20-25,000	54% ± 6%	48% to 60%
	$25-35,000	49% ± 5%	44% to 54%
	$35-50,000	41% ± 6%	35% to 47%
	$50,000+	34% ± 7%	27% to 41%
by Employment Status:	Employed	48% ± 3%	45% to 51%
	Self Employed	58% ± 6%	51% to 64%
	Unemp >1 Yr	69% ±16%	53% to 85%
	Unemp <1 Yr	54% ±13%	40% to 67%
	Homemaker	52% ± 6%	46% to 57%
	Student	40% ±15%	25% to 55%
	Retired	60% ± 4%	56% to 64%
by Education Level:	<9th Grade	70% ± 7%	63% to 77%
	Some HS	71% ± 5%	66% to 76%
	HS Grad	62% ± 3%	59% to 65%
	Some Tech School	67% ±14%	52% to 81%
	Tech School Grad	44% ±13%	31% to 57%
	Some College	43% ± 5%	38% to 47%
	College Grad	27% ± 4%	23% to 31%
	Post Grad	20% ± 7%	13% to 26%

NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health. Table prepared by the Office of Data, Research, and Vital Statistics.

VI. WEIGHT CONTROL

WEIGHT CONTROL

Overweight adults are at risk for diabetes, heart disease, and at least one form of cancer (16). Some 34 million Americans are estimated to be overweight (17).

Two measures of body weight are used in the BRFS system. Both use self-reported height and weight. The first measure classifies individuals according to the 1959 Metropolitan Height-Weight tables. Ideal weight is defined as the midvalue of a medium-framed person from the Metropolitan tables, and a person is considered to be overweight if he or she is at or above 120 percent of ideal weight.

The second measure of body weight utilizes the Body Mass Index (BMI) which is derived by the following formula:

$$\text{Weight (kg)/Height (m)}^2$$

An index of > 27.8 for men and > 27.3 for women has been established as the cutoff points, and individuals with values at or beyond those figures are considered to be overweight. These values represent the sex-specific 85th percentile of BMI for U.S. adults aged 20 to 29 years from the Second National Health and Nutrition Examination Survey (NHANES II) (17).

Data from the national 1987 BRFSS (33 participating states) showed that the prevalence of obesity ranged from 15.2 percent in New Mexico to 25.7 percent in Wisconsin and Indiana (18). Median prevalence of overweight status was 21.8 percent for men and 21.1 percent for women. By region, median prevalence of obesity was lower in the west and northeast and higher in the south and midwest. Overall the median prevalence of obesity was 21.1 percent.

Twenty-six percent of Maine adults were considered to be obese, based on the Metropolitan Height-Weight tables. By age, only those in the 45-54 age group were at significantly greater risk than those in other age groups (Figure VI-1). When data for obesity were considered by level of education, those with less than a ninth-grade education showed a prevalence of 41 percent, which was significantly above the state average (Figure VI-2).

Figure VI-1:
Prevalence of Obesity by Age
1987-1988

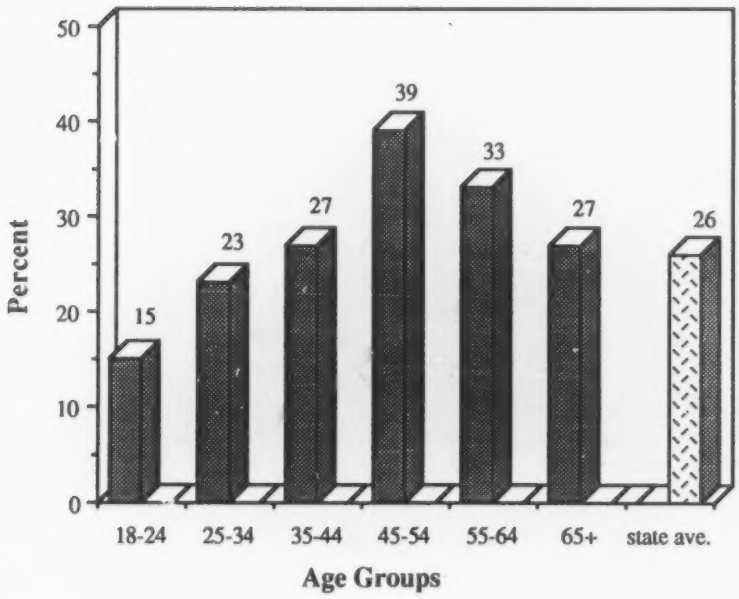
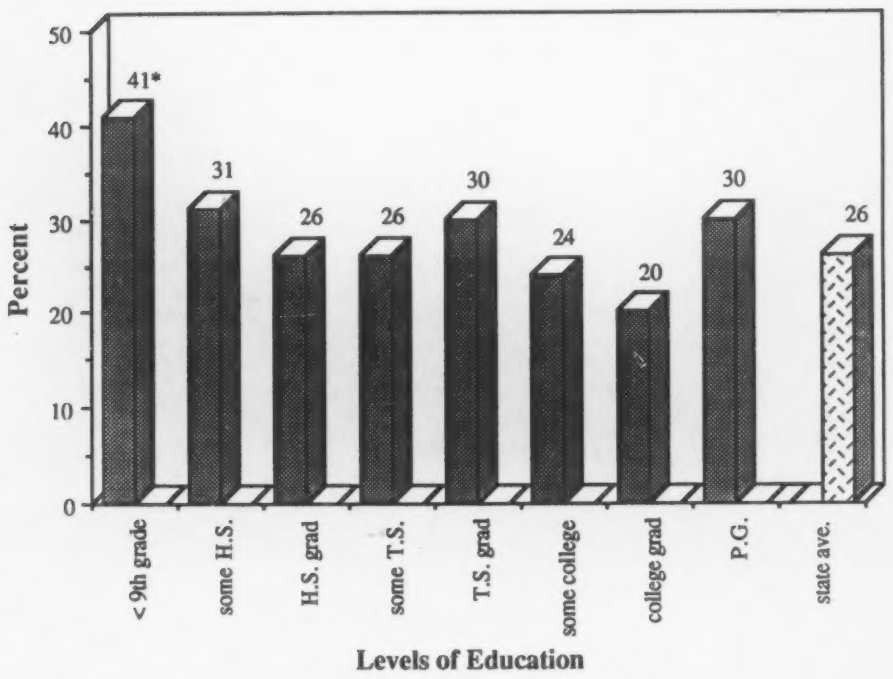


Figure VI-2:
Prevalence of Obesity by Education
1987-1988



**significantly higher than state average*

H.S. = high school T.S. = technical school P.G. = post graduate

An estimated 43 percent of Maine adults reported that they were trying to lose weight.

Data on BMI, a more objective measure of obesity, showed that the prevalence of obesity is lower in Maine using this measure, 21.5 percent (1988 only). Maine ranked 27th in comparison with other states.

1990 Health Objectives for the Nation

State that the goal of health promotion efforts is to reduce the prevalence of obesity to approximately 18 percent of men and 21 percent of women without impairing nutritional status (8). It is unlikely that this goal will be met by 1990.

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Obesity

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		26% ± 2%	25% to 28%
by Sex:	Male	29% ± 3%	26% to 32%
	Female	24% ± 2%	22% to 26%
by Age Group:	Age 18-24	15% ± 5%	10% to 19%
	Age 25-34	23% ± 3%	20% to 26%
	Age 35-44	27% ± 4%	23% to 30%
	Age 45-54	39% ± 5%	33% to 44%
	Age 55-64	33% ± 5%	27% to 38%
	Age 65+	27% ± 4%	23% to 31%
by Marital Status:	Married	28% ± 2%	26% to 30%
	Divorced	22% ± 5%	17% to 27%
	Widowed	28% ± 5%	23% to 33%
	Separated	34% ±14%	20% to 48%
	Never Married	20% ± 5%	15% to 25%
	Unmarried Couple	23% ±11%	12% to 34%
by Income Level:	<$10,000	31% ± 4%	27% to 36%
	$10-15,000	33% ± 5%	27% to 38%
	$15-20,000	26% ± 5%	21% to 31%
	$20-25,000	27% ± 5%	22% to 32%
	$25-35,000	28% ± 4%	23% to 32%
	$35-50,000	24% ± 5%	19% to 29%
	$50,000+	21% ± 6%	15% to 26%
by Employment Status:	Employed	25% ± 2%	23% to 28%
	Self Employed	28% ± 6%	23% to 34%
	Unemp >1 Yr	39% ±17%	22% to 56%
	Unemp <1 Yr	23% ±11%	12% to 34%
	Homemaker	27% ± 5%	22% to 32%
	Student	6% ± 7%	0% to 14%
	Retired	30% ± 4%	26% to 34%
by Education Level:	<9th Grade	41% ± 7%	34% to 48%
	Some HS	31% ± 5%	26% to 37%
	HS Grad	26% ± 3%	23% to 28%
	Some Tech School	26% ±13%	13% to 40%
	Tech School Grad	30% ±12%	18% to 42%
	Some College	24% ± 4%	20% to 28%
	College Grad	20% ± 4%	17% to 24%
	Post Grad	30% ± 8%	22% to 38%

NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health.
Table prepared by the Office of Data, Research, and Vital Statistics.

VII. PHYSICAL ACTIVITY

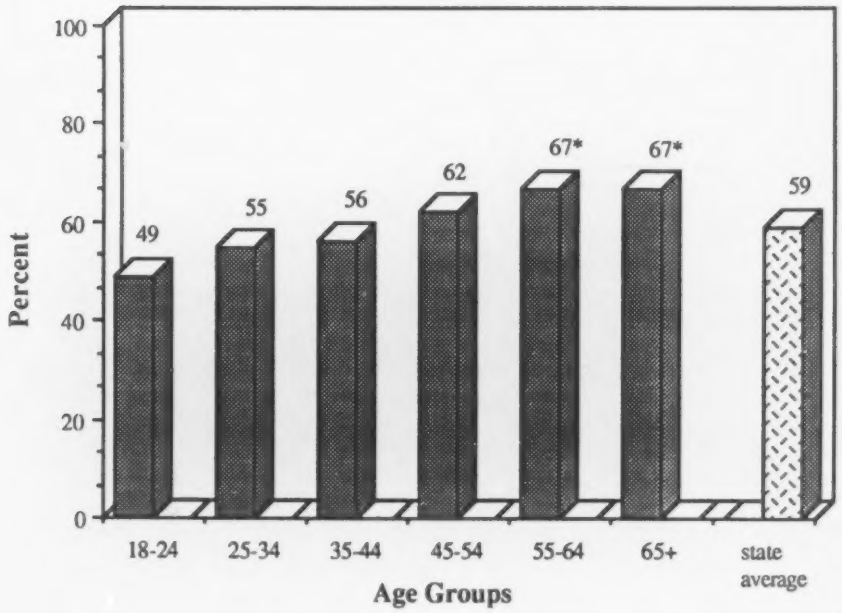
PHYSICAL ACTIVITY

The benefits of physical activity in reducing risk of diabetes, cardiovascular disease, and osteoporosis are well documented (19-21). Evidence linking sedentary lifestyle to cancer is less certain, although a strong correlation exists for obesity and the development of endometrial cancer (22). The contribution of even moderate amounts of physical activity in reducing stress and providing a feeling of well-being cannot be overstated.

Unfortunately, fewer than half of the American people participates in sufficient physical activity to confer health benefits. For purposes of BRFSS data analysis, sedentary lifestyle was estimated by the percentage of persons who reported no physical activity or physical activity fewer than three times per week and/or less than 20 minutes per occasion. This level of activity represents the minimum amount of physical activity likely to confer benefit. Nationally, 1985 prevalences of sedentary lifestyle by state ranged from about 43 percent to 67 percent for men and from about 41 percent to 70 percent for women (23).

The overall prevalence of sedentary lifestyle was 59 percent in Maine adults. The prevalence was significantly higher than the state average in older age groups (Figure VII-1). Overall, males reported slightly higher prevalence than did females.

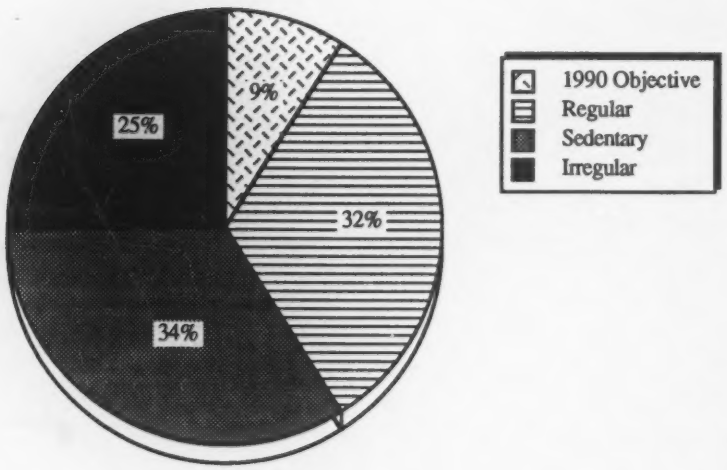
Figure VII-1:
Prevalence of Sedentary Lifestyle by Age
1987-1988



**significantly higher than state average*

Respondents were classified by frequency of exercise--regular, irregular, sedentary, and those who had attained the 1990 Health Objectives for the Nation for an acceptable level of physical activity (Figure VII-2). Only 9 percent were exercising at a level sufficient to meet the 1990 objective.

Figure VII-2:
Frequency of Exercise
1987-1988



Walking was reported by both sexes as their most common form of primary exercise in both 1987 and 1988.

1990 Health Objectives for the Nation

The objectives had sought a goal of more than 60 percent level of vigorous physical activity in adults aged 18-64 by 1990. This goal will not be achieved. More realistic goals have been set for physical activity levels; 75 percent participation in less vigorous levels of physical activity has been deemed appropriate for American adults (8).

> "Progress toward achievement of this objective will require further development of a social and economic environment conducive to active lifestyles for large segments of the population, and sufficient information about the determination of an active lifestyle to permit effective and efficient program efforts" (8).

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Sedentary Lifestyle

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		59% ± 2%	57% to 61%
by Sex:	Male	61% ± 3%	57% to 64%
	Female	58% ± 2%	55% to 60%
by Age Group:	Age 18-24	49% ± 7%	43% to 56%
	Age 25-34	55% ± 4%	51% to 59%
	Age 35-44	56% ± 4%	52% to 60%
	Age 45-54	62% ± 5%	57% to 67%
	Age 55-64	67% ± 5%	62% to 72%
	Age 65+	67% ± 4%	63% to 71%
by Marital Status:	Married	59% ± 2%	57% to 62%
	Divorced	60% ± 6%	54% to 65%
	Widowed	72% ± 5%	66% to 77%
	Separated	75% ±13%	62% to 88%
	Never Married	50% ± 6%	45% to 56%
	Unmarried Couple	51% ±13%	38% to 64%
by Income Level:	<$10,000	69% ± 4%	64% to 73%
	$10-15,000	66% ± 5%	60% to 71%
	$15-20,000	61% ± 6%	55% to 67%
	$20-25,000	56% ± 6%	50% to 61%
	$25-35,000	53% ± 5%	48% to 58%
	$35-50,000	50% ± 6%	44% to 56%
	$50,000+	54% ± 7%	47% to 61%
by Employment Status:	Employed	58% ± 3%	55% to 60%
	Self Employed	62% ± 6%	56% to 68%
	Unemp >1 Yr	47% ±18%	29% to 64%
	Unemp <1 Yr	47% ±13%	34% to 61%
	Homemaker	57% ± 5%	51% to 62%
	Student	48% ±15%	33% to 63%
	Retired	65% ± 4%	61% to 69%
by Education Level:	<9th Grade	74% ± 6%	67% to 80%
	Some HS	68% ± 5%	63% to 74%
	HS Grad	62% ± 3%	58% to 65%
	Some Tech School	52% ±15%	37% to 67%
	Tech School Grad	58% ±13%	45% to 71%
	Some College	55% ± 5%	50% to 60%
	College Grad	50% ± 5%	45% to 54%
	Post Grad	43% ± 8%	35% to 52%

NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health.
Table prepared by the Office of Data, Research, and Vital Statistics.

VIII. ALCOHOL USE

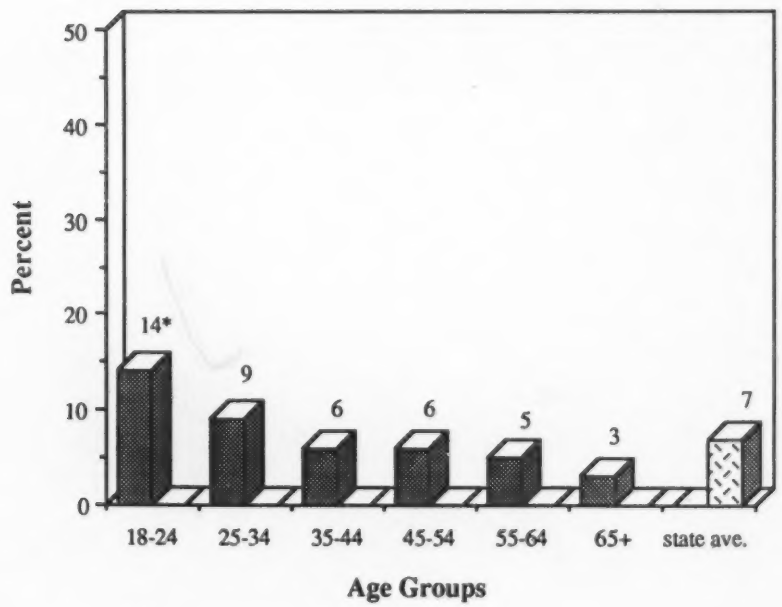
ALCOHOL USE

Alcohol abuse is a complex behavior and cannot be defined by a single parameter. For purposes of behavioral risk surveillance, heavier (or chronic) drinking is defined as an average of two or more drinks of beer, wine, or liquor every day. This cutoff is intended to classify regular alcohol use and not to identify the alcohol abuser. However, epidemiological research has indicated that chronic exposure to alcohol at or above the two-drink-a-day level leads to a disproportionate share of alcohol-related morbidity and mortality (24).

National BRFSS data from 1985 (22 participant states) showed a consistent pattern of heavier drinking among men than women. The prevalence figures for men ranged from a low of 5 percent in North Dakota and Utah to a high of 17 percent in Illinois. In women, the prevalence of heavier drinking ranged from 1 percent in four states to a high of 5 percent in two states (25).

Respondents to Maine's BRFSS reported an overall prevalence of 7 percent for chronic alcohol use in 1987-1988. The youngest age group had a significantly higher rate of chronic drinking than that reported by all other adults.

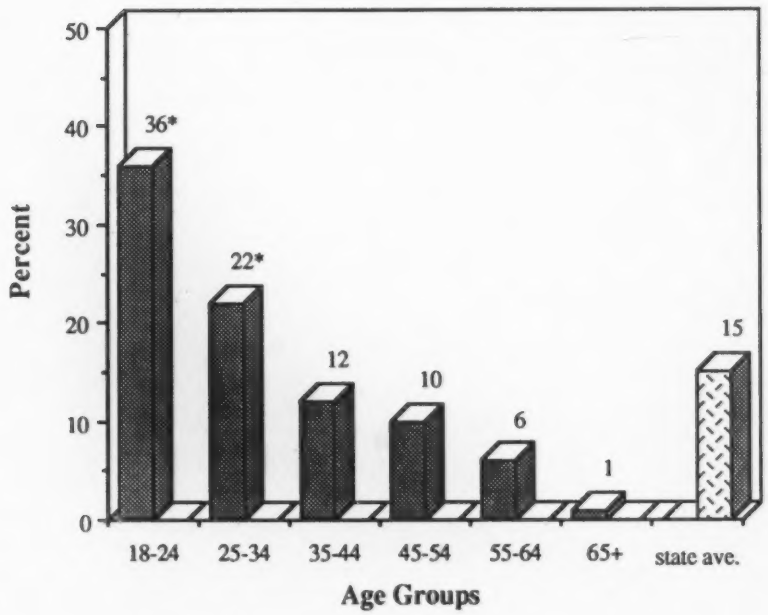
Figure VIII-1:
Prevalence of Chronic Drinking
1987-1988



**significantly above state average*

Acute alcohol use is defined as consumption of 5 or more drinks on one occasion, one or more times in the past month. Average prevalence of acute drinking in Maine was 15 percent for 1987-1988 combined data. Figure VIII-2 demonstrates a higher rate of acute drinking among young people compared to older adults. Men had almost 3 times the rate of acute drinking than women (23% v. 8%).

Figure VIII-2:
Prevalence of Acute Drinking
1987-1988



**significantly above state average*

The rate of acute drinking tended to rise with increased income in Maine adults. Individuals with household incomes of $25-35,000 had rates of acute drinking significantly above the state average.

Drinking and Driving

There were 91 alcohol-related motor vehicle fatalities in Maine during 1988. National BRFSS data on drinking and driving are limited and available only for 10 states for the years 1982 and 1985. Drinking and driving behavior was determined by the answer to the following question: "During the past month, how many times have you driven when you've had perhaps too much to drink?" Every state that reported such data showed a decrease in drinking and driving among males aged 35 to 54 between 1982 and 1985 (27). Prevalences of drinking and driving ranged from 1.1 percent in West Virginia to 4.8 percent in California and Georgia in 1985.

Drinking and driving were reported by 2 percent of all Maine residents for 1987-1988. Five percent of those aged 25-34 reported drinking and driving, a rate significantly higher than the average for the state. It should be pointed out that these results are based on self-reported data; the rates may, in fact, be higher.

1990 Health Objectives for the Nation

The objectives recommended several future steps to continue progress in reducing death and disability from alcohol-related traffic accidents (8). They include:

- Public perception of being apprehended while drinking and driving must remain high
- Awareness efforts should also inform the public about the risks involved when drinking and driving
- Recognizing that severe fines and jail sentences have not proved to be effective deterrents, efforts should be directed at active community-based detection and intervention programs to prevent repeat occurrences

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Chronic Drinking

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		7% ± 1%	6% to 8%
by Sex:	Male	12% ± 2%	10% to 14%
	Female	3% ± 1%	2% to 4%
by Age Group:	Age 18-24	14% ± 5%	9% to 18%
	Age 25-34	9% ± 2%	7% to 11%
	Age 35-44	6% ± 2%	4% to 8%
	Age 45-54	6% ± 3%	3% to 9%
	Age 55-64	5% ± 2%	2% to 7%
	Age 65+	3% ± 1%	1% to 4%
by Marital Status:	Married	5% ± 1%	4% to 6%
	Divorced	10% ± 4%	7% to 14%
	Widowed	2% ± 2%	0% to 3%
	Separated	11% ± 9%	1% to 20%
	Never Married	17% ± 4%	13% to 22%
	Unmarried Couple	9% ± 8%	2% to 17%
by Income Level:	<$10,000	5% ± 2%	3% to 7%
	$10-15,000	7% ± 3%	4% to 9%
	$15-20,000	6% ± 3%	3% to 9%
	$20-25,000	6% ± 3%	3% to 8%
	$25-35,000	10% ± 3%	7% to 13%
	$35-50,000	5% ± 3%	2% to 7%
	$50,000+	12% ± 5%	7% to 17%
by Employment Status:	Employed	9% ± 2%	7% to 11%
	Self Employed	10% ± 4%	6% to 14%
	Unemp >1 Yr	9% ±10%	0% to 19%
	Unemp <1 Yr	3% ± 5%	0% to 7%
	Homemaker	2% ± 2%	1% to 4%
	Student	10% ± 9%	0% to 19%
	Retired	4% ± 2%	2% to 6%
by Education Level:	<9th Grade	8% ± 4%	4% to 11%
	Some HS	9% ± 3%	6% to 12%
	HS Grad	5% ± 1%	3% to 6%
	Some Tech School	18% ±12%	6% to 29%
	Tech School Grad	8% ± 7%	1% to 15%
	Some College	9% ± 3%	6% to 12%
	College Grad	10% ± 3%	7% to 12%
	Post Grad	5% ± 4%	1% to 9%

NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health.
Table prepared by the Office of Data, Research, and Vital Statistics.

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Acute Drinking

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		15% ± 1%	13% to 16%
by Sex:	Male	23% ± 3%	20% to 25%
	Female	8% ± 1%	7% to 9%
by Age Group:	Age 18-24	36% ± 6%	30% to 42%
	Age 25-34	22% ± 3%	19% to 25%
	Age 35-44	12% ± 3%	9% to 15%
	Age 45-54	10% ± 3%	6% to 13%
	Age 55-64	6% ± 3%	4% to 9%
	Age 65+	1% ± 1%	0% to 2%
by Marital Status:	Married	11% ± 2%	10% to 13%
	Divorced	18% ± 5%	13% to 22%
	Widowed	2% ± 2%	0% to 4%
	Separated	22% ±12%	9% to 34%
	Never Married	34% ± 5%	29% to 40%
	Unmarried Couple	29% ±12%	17% to 41%
by Income Level:	<$10,000	12% ± 3%	9% to 15%
	$10-15,000	14% ± 4%	10% to 18%
	$15-20,000	12% ± 4%	8% to 16%
	$20-25,000	14% ± 4%	10% to 18%
	$25-35,000	21% ± 4%	17% to 25%
	$35-50,000	15% ± 4%	10% to 19%
	$50,000+	19% ± 6%	13% to 24%
by Employment Status:	Employed	19% ± 2%	17% to 21%
	Self Employed	21% ± 5%	16% to 26%
	Unemp >1 Yr	19% ±14%	5% to 33%
	Unemp <1 Yr	37% ±13%	24% to 50%
	Homemaker	6% ± 3%	3% to 9%
	Student	29% ±14%	15% to 43%
	Retired	2% ± 1%	1% to 3%
by Education Level:	<9th Grade	8% ± 4%	4% to 12%
	Some HS	17% ± 4%	13% to 22%
	HS Grad	13% ± 2%	11% to 15%
	Some Tech School	22% ±13%	9% to 34%
	Tech School Grad	26% ±11%	14% to 37%
	Some College	19% ± 4%	16% to 23%
	College Grad	15% ± 3%	11% to 18%
	Post Grad	8% ± 5%	4% to 13%

NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health.
Table prepared by the Office of Data, Research, and Vital Statistics.

1987-88 Maine Behavioral Risk Factor Survey
Estimated Percent at Risk and Approximate 95% Confidence Intervals
for Drinking and Driving

		Estimated Percent at Risk	Approximate 95% C. I.
for All Adults:		2% ± 1%	2% to 3%
by Sex:	Male	4% ± 1%	3% to 5%
	Female	1% ± 1%	1% to 2%
by Age Group:	Age 18-24	4% ± 3%	1% to 6%
	Age 25-34	5% ± 2%	4% to 7%
	Age 35-44	2% ± 1%	1% to 3%
	Age 45-54	1% ± 1%	0% to 2%
	Age 55-64	0% ± 1%	0% to 1%
	Age 65+	0% ± 0%	0% to 1%
by Marital Status:	Married	2% ± 1%	1% to 2%
	Divorced	4% ± 2%	1% to 6%
	Widowed	0% ± 0%	0% to 0%
	Separated	0% ± 0%	0% to 0%
	Never Married	7% ± 3%	4% to 10%
	Unmarried Couple	2% ± 3%	0% to 5%
by Income Level:	<$10,000	1% ± 1%	0% to 2%
	$10-15,000	4% ± 2%	2% to 6%
	$15-20,000	2% ± 2%	0% to 3%
	$20-25,000	2% ± 2%	1% to 4%
	$25-35,000	3% ± 2%	1% to 5%
	$35-50,000	4% ± 2%	2% to 6%
	$50,000+	2% ± 2%	0% to 4%
by Employment Status:	Employed	3% ± 1%	2% to 4%
	Self Employed	4% ± 2%	1% to 6%
	Unemp >1 Yr	7% ± 9%	0% to 16%
	Unemp <1 Yr	7% ± 7%	0% to 13%
	Homemaker	0% ± 1%	0% to 1%
	Student	1% ± 4%	0% to 5%
	Retired	0% ± 0%	0% to 1%
by Education Level:	<9th Grade	0% ± 0%	0% to 0%
	Some HS	2% ± 2%	0% to 4%
	HS Grad	2% ± 1%	1% to 2%
	Some Tech School	19% ±12%	7% to 30%
	Tech School Grad	4% ± 5%	0% to 8%
	Some College	3% ± 2%	2% to 5%
	College Grad	2% ± 1%	1% to 4%
	Post Grad	4% ± 3%	1% to 7%

NOTE: The 95% Confidence Intervals shown on this table are based on the Binomial Distribution and assume a simple random sample with N=2,509. Due to design effects, actual confidence intervals are wider. All values shown are rounded to the nearest whole percent.
Source of Data: Division of Health Promotion and Education, Bureau of Health.
Table prepared by the Office of Data, Research, and Vital Statistics.

IX. PREVENTIVE MEASURES AND SCREENING

PREVENTIVE MEASURES AND SCREENING

Cholesterol screening

Elevated blood cholesterol is a major risk factor for coronary heart disease. The risk of coronary heart disease rises progressively as cholesterol rises. Research studies have shown that mean serum cholesterol values dropped sharply between 1960 and 1980, as public awareness of the dangers of high cholesterol increased in the United States. Table IX-1 gives initial classification and recommended follow-up based on total cholesterol.

Table IX-1

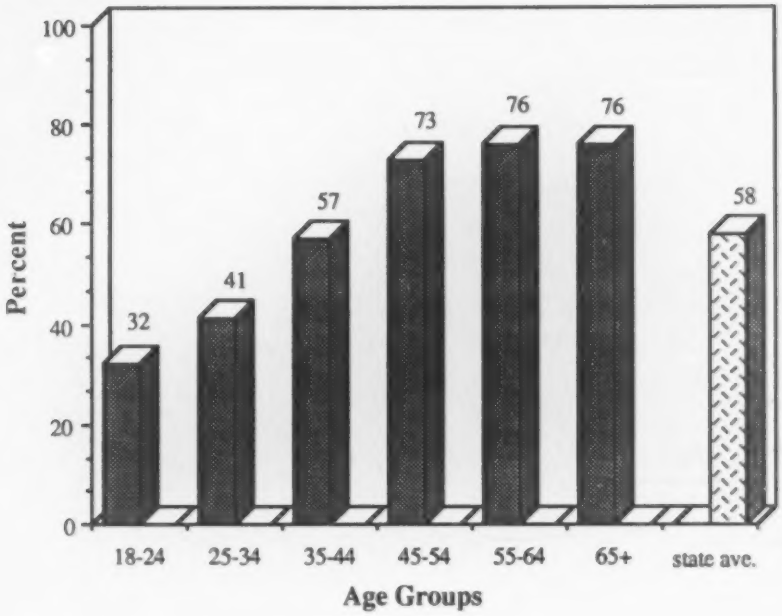
Initial Classification and Recommended Follow-up Based on Total Cholesterol

A. Classification	
<200 mg/dl	Desirable blood cholesterol
200-239 mg/dl	Borderline-high blood cholesterol
240 mg/dl	High blood cholesterol
B.Recommended Follow-up	
Total cholesterol <200 mg/dl	Repeat within 5 years
Total cholesterol 200-239 mg/dl	
Without definite CHD or two other CHD risk factors (one of which can be male sex)	Dietary information and recheck annually
With definite CHD or two other CHD risk factors (one of which can be male sex)	Lipoprotein analysis; further action based on LDL-cholesterol level
Total cholesterol 240 mg/dl	

Source: Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. US Department of Health and Human Services, NIH Publications No. 88-1088, May 1988

Figure IX-1 shows frequency of cholesterol testing among Maine adults by age.

Figure IX-1: Prevalence of Cholesterol Testing, 1988



Of those who had had blood cholesterol testing, about 24 percent of BRFS respondents reported that their cholesterol levels were high in 1988.

1990 Health Objectives for the Nation

The National Heart, Lung and Blood Institute has taken the lead in developing plans for the National Cholesterol Education Program. Educational efforts focus on the importance of individuals knowing their own blood cholesterol level and how to interpret it. Individuals are encouraged to see their physician if cholesterol is high and to follow a balanced diet even if cholesterol is normal.

The food industry is being encouraged to provide more complete nutritional information on food labels. In addition, the Food and Drug Administration is increasing public awareness of the relationship between dietary fat, cholesterol, and heart disease.

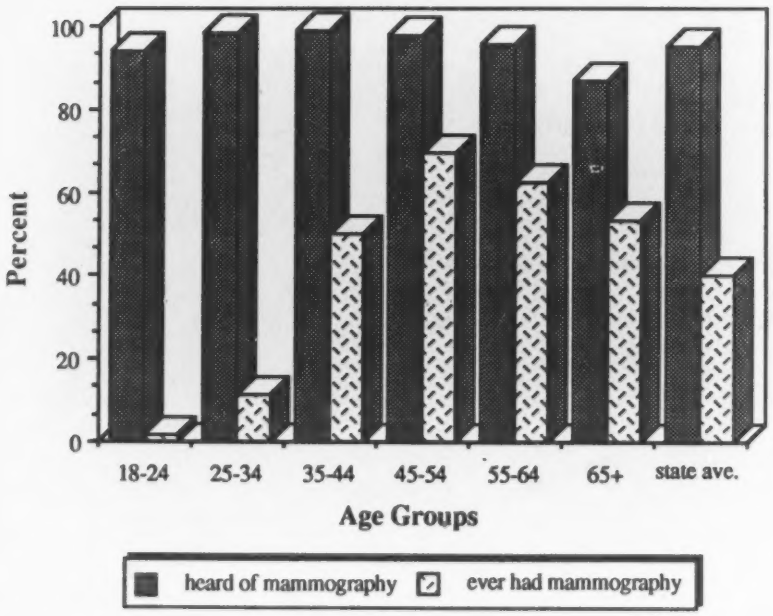
Mammography and Breast Self-Examination

Breast cancer mortality in Maine was 32.5 per 100,000 in 1986 (26). Maine ranked 22nd among states for breast cancer mortality.

When malignant breast tumors are detected early enough, prognosis is greatly improved. In one study, 85 percent of women with localized disease were alive five years after diagnosis of breast cancer; only 10 percent of those with distant metastases when the disease was discovered were alive at the 5-year mark (29).

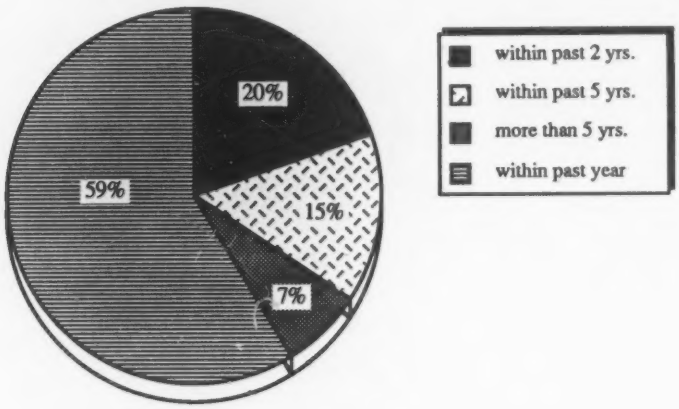
Screening for breast cancer relies on two modes of detection--mammography and breast examination, both breast self-examination and breast physical examination by a health professional. In one screening study, 40 percent of cancers were found by mammography alone (28); physical examination alone had failed to detect the cancer.

Figure IX-2:
Prevalence of Awareness and Utilization of Screening Mammography, 1988



Knowledge of mammography among Maine women was very high; however, there was a fairly wide gap beween knowledge and utilization of mammography as a screeening tool for early detection of breast cancer as seen in Figure IX-2. Figure IX-3 shows how frequently women had mammograms.

Figures IX-3: Frequency of Screening Mammograpy, 1988



Ninety-five percent of all Maine women over age 18 said they knew how to examine their own breasts for lumps. Of these women, 47.3 percent examined their breasts on a monthly basis; the remainder examined their breasts weekly or yearly.

The American Cancer Society recommends annual mammograms for all women aged 50 or more, mammogram at 1-2 year intervals for women 40-49 years of age, and a baseline mammogram for women aged 35-39 years. Breast self-examination is advocated beginning at age 20 and performed on a monthly basis. Finally, annual breast examinations by a health care provider should commence at age 20, be performed at 3-year intervals until age 40, and then continue on an annual basis thereafter (29).

Pap Smear

Time trends for cervical cancer and geographic comparisons between areas with intensive and nonintensive screening indicate that the pap smear is highly effective in preventing invasive cancer of the cervix (30). According to the American Cancer Society, the death rate from invasive cervical cancer has declined in the United States by 70 percent over the last 40 years, due largely to the pap smear (31). Still, 13,000 new cases of invasive cervical cancer were expected to occur nationally in 1989.

Although consensus exists on the broad issue of the worth of the pap smear to detect abnormal cervical cells, there is less agreement about the timing of pap smears. In 1987, the American Cancer Society convened a panel of specialists to study this issue and released the following recommendations:

> "That all women who are, or who have been, sexually active, or have reached age 18 years, have an annual pap test and pelvic examination. After a women has had three or more consecutive satisfactory normal annual examinations, the pap smear may be performed less frequently at the discretion of her physician (32).

Almost all Maine women surveyed (98.7 percent) had heard of a pap smear. Of those, 94.6 percent had had a pap smear, according to those surveyed in 1988. In keeping with trends seen nationwide, Maine women aged 65 years of age or older had pap smears less frequently than younger women.

Colorectal cancer

In 1989, 14 percent of new cancer cases in men will be attributable to colorectal cancer; in women the figure will be 15 percent. According to estimates of the American Cancer Society, new cases of colorectal cancer will exceed that of lung cancer in many states, including Maine (33).

Risk factors for colorectal cancer include ulcerative colitis, close relatives with the disease, familial polyps, and a high fat diet. Because the link between inherited susceptibility and the development of colon cancer is so strong, it is important that individuals who have first-degree relatives with colorectal cancer undergo standard screening. In addition, persons related to first-degree relatives who have intestinal polyps should also be screened for colon cancer (34).

Three types of procedures are used in the general population to detect for colorectal cancer:

- Blood stool test
- Digital rectal examination
- Proctoscopic examination

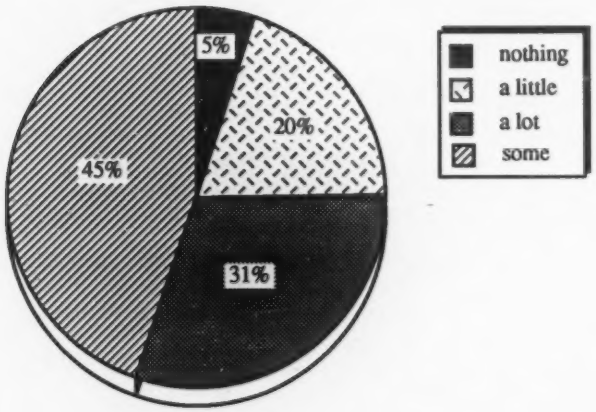
While knowledge of these various types of examinations was fairly high among Maine residents, in practice not many individuals had had one of these tests or examinations. For example, 55.1 percent of respondents had heard of a proctoscopic examination, yet only 25.2 percent had had one.

As colorectal cancer becomes more common, particularly as the population ages, public awareness of screening procedures and physician use of them for susceptible groups should be fostered.

X. AIDS

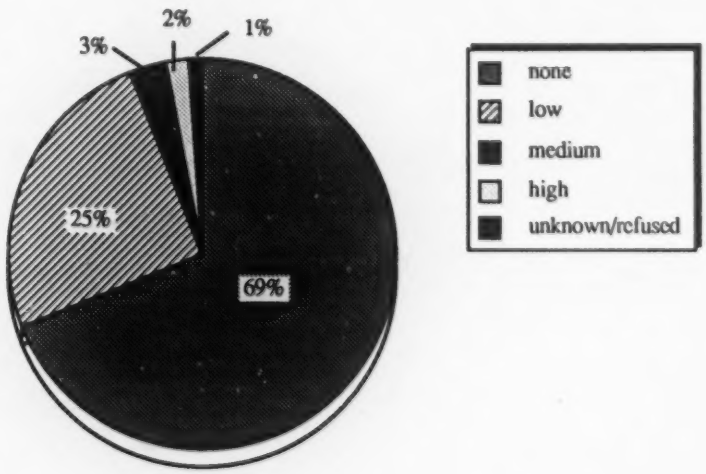
AIDS

Figure X-1:
Prevalence of Knowledge About AIDS, 1988



Three quarters of Maine adults knew "a lot" or "something" about AIDS (Figure X-1). Younger respondents knew more about AIDS than older respondents. Over two-thirds of adults stated that their chances of getting AIDS were "none" (Figure X-2).

Figure X-2:
Prevalence of Perceived Risk of Getting AIDS, 1988



A companion question asked if the respondent's concern about AIDS had changed his or her life in any way. Three quarters responded that it had not.

Just under 13 percent of respondents had had a blood test for the AIDS virus, with 49 percent of them stating it was when they had donated blood.

Finally, when asked if they had ever personally known someone with the AIDS virus infection or with AIDS, 6.1 percent responded "yes".

XI. MISCELLANEOUS

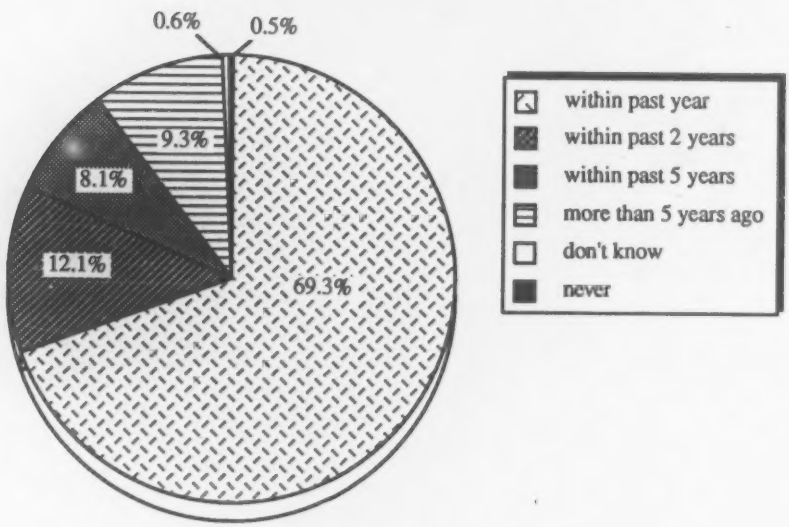
MISCELLANEOUS

Other areas addressed in the survey include visits to physicians for routine care, frequency of flu shots, pregnancy status, dietary habits, diabetes, oral contraceptives, and hysterectomy.

Routine checkup

One measure of preventive medicine is annual medical checkups. Over two-thirds of Maine adults had had a routine checkup within the past year (Figure XI-1).

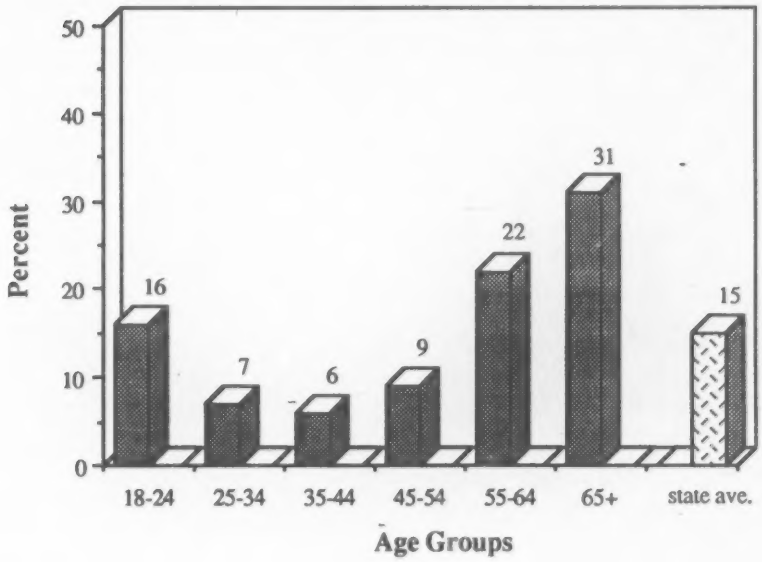
Figure XI-1:
Frequency of Routine Checkups, 1988



Influenza immunization

Data for immunizations against influenza are available for 1987 only. The majority of respondents did not report having had a flu shot in the last 12 months. Figure XI-2 shows prevalence by age group.

Figure XI-2:
Prevalence of Influenza Immunizations, 1988



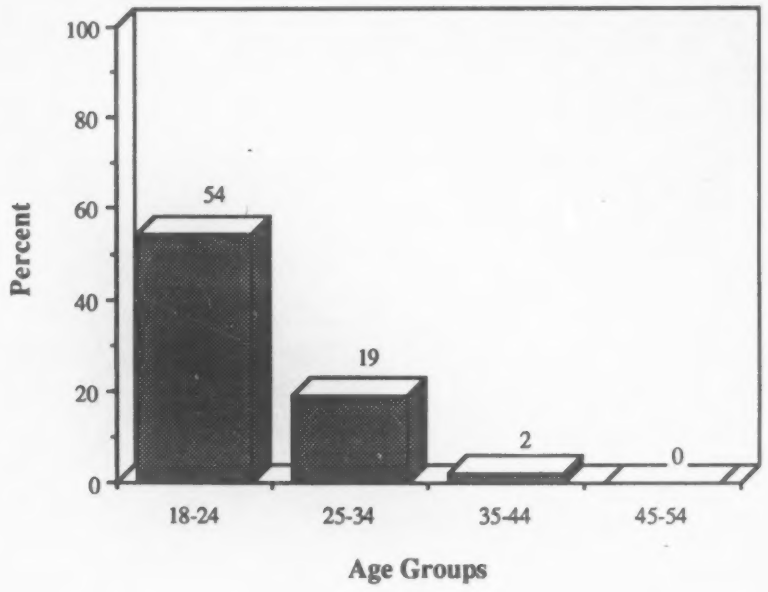
Pregnancy Status

Among women of childbearing age, 7 percent stated that they were pregnant in the 1987 survey; 4 percent responded that they were pregnant in the 1988 survey.

Oral contraceptives

Figure XI-3 presents the estimated prevalence of oral contraceptive use among Maine women of childbearing age. The greatest use was limited to the youngest age group.

Figure XI-3: Prevalence of Oral Contraceptive Use, 1988



Diet

Two questions assessed dietary fiber and fat intake in the 1988 survey. Responses were classified as "high," "medium," or "low". The prevalence for each category are shown in Figures XI-4 and XI-5.

Figures XI-4:
Prevalence of Fat in the Diet, 1988

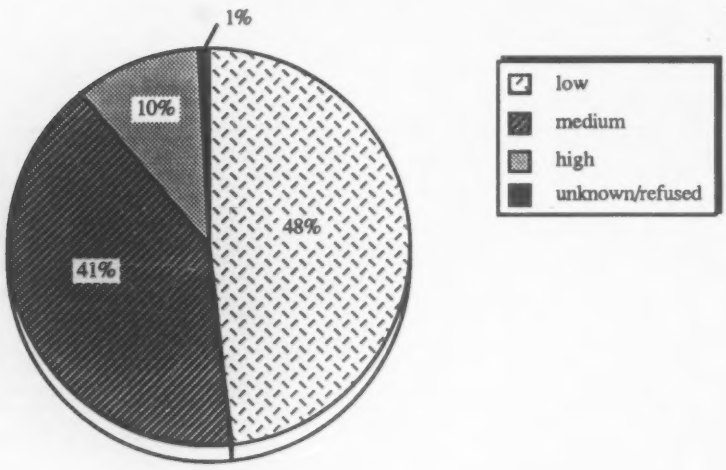
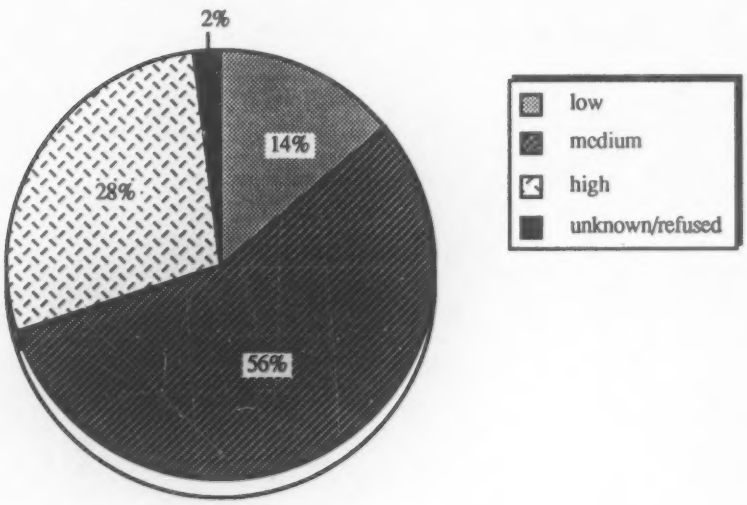


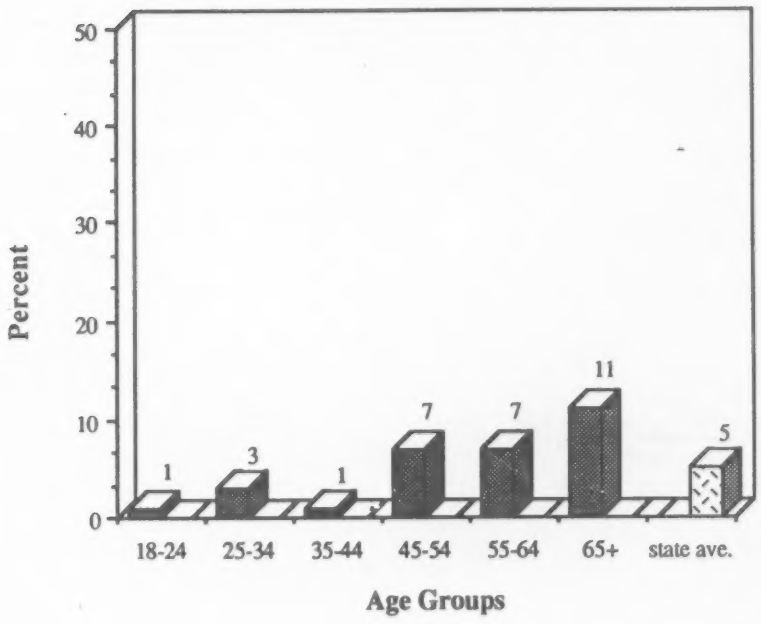
Figure XI-5:
Prevalence of Fiber in the Diet, 1988



Diabetes

The overall self-reported prevalence of diabetes in Maine was 5 percent among respondents in the 1988 survey. As might be expected, there was a trend toward higher prevalence in the older age groups (Figure XI-6). It should be noted that approximately twice as many people do not know they have diabetes than are known to have it at any given time.

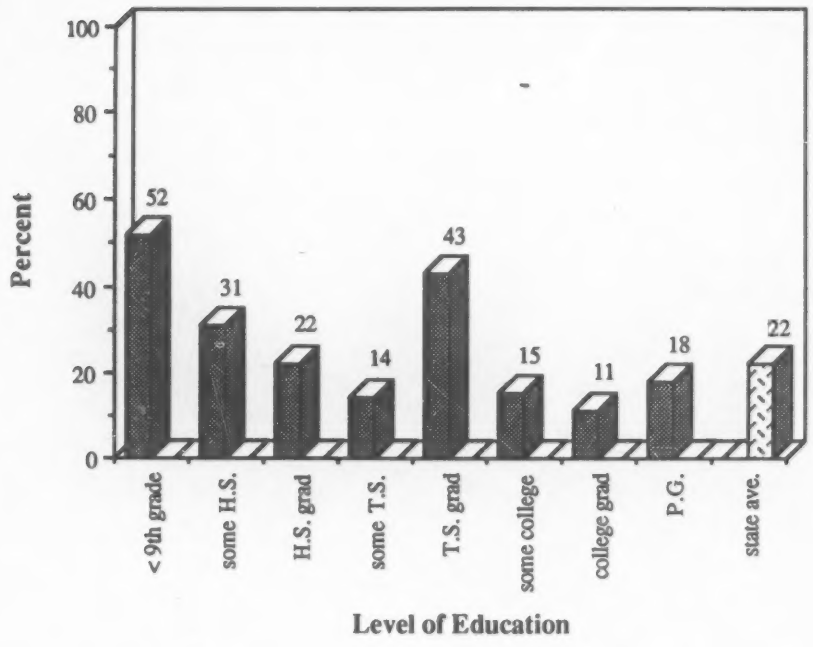
Figure XI-6:
Prevalence of Diabetes, 1988



Hysterectomy

Twenty-two percent of Maine women responding to the 1988 survey stated that they had had a hysterectomy. With the exception of those with a technical school degree, there appears to be a trend toward higher rates of hysterectomy among women with lower levels of education (Figure XI-7).

Figure XI-7:
Prevalence of Hysterectomy, 1988



H.S. = High School T.S. = Technical School P.G. = Postgraduate

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APPENDIX

Appendix-A

Behavioral Risk Factor Survey

Definitions of Risk Factors

Seatbelt Use

(1) Respondents reporting they "seldom" or "never" use seatbelts

(2) Respondents reporting they "sometimes", "seldom", or "never" use seatbelts. This is the preferred definition for seatbelt nonuse because these data items are closer to validation studies of seatbelt usage than definition number one.

Hypertension

(1) Respondents who report they have ever been told they are hypertensive and their blood pressure is "still high".

(2) Respondents who report they have ever been told they are hypertensive.

(3) Respondents who report they have been told their blood pressure is high more than once, or are on medication, or report their blood pressure is still high. This data item has been added to define "current hypertensives", a reflection of the known, diagnosed hypertensives in the population. This is the National Heart, Lung and Blood Institute's definition.

Overweight

(1) Respondent at or above 120% of ideal weight. Ideal weight defined as the mid-value of a median frame person from the 1959 Metropolitan Height-Weight tables.

(2) Females with Body Mass Index (weight in kilograms divided by height in meters squared [W/H**2]) >=27.3 and males with Body Mass Index >=27.8.

Smoking Current regular smoker (ever smoked 100 cigarettes and smoke now)

Smokeless tobacco	Current smokeless tobacco users (ever used or tried it and use it now)
Acute drinking	Respondents who report having five or more drinks on an occasion, one or more times in the past months
Drink/Drive	Respondents who report having driven after having too much to drink, one or more times in the past month
Chronic drinking	Respondents who report an average of 60 or more alcoholic drinks a month
Sedentary lifestyle	Respondents at sedentary or irregular activity level

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John R. McKernan, Jr.
Governor

Rollin Ives
Commissioner

STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
AUGUSTA, MAINE 04333

Erratum

Please note that Figures IV-1 and IV-2 on pages 24 and 25 demonstrate the prevalence of those who are currently hypertensive and not those who have uncontrolled hypertension, as stated in the titles to those graphs.